

Article 34

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1. A method of enhancing the specificity of a plant lipoxygenase for position 11 of arachidonic acid, comprising the step of

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- exchanging at least one amino acid in a wild type lipoxygenase, characterized in that the exchange takes place at position 576 of potato tuber lipoxygenase or at a corresponding position in a lipoxygenase of another plant species.

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2. The method according to claim 2, characterized in that the exchange at position 576 leads to the presence of a Phe residue in the mutant.

3. The method according to one of claims 1 or 2, characterized in that the amino acid exchange is effected by directed mutagenesis.

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4. Lipoxygenase obtainable by a method according to any one of claims 1 to 3.

5. Nucleic acid coding for a lipoxygenase according to claim 4.

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6. Vector containing a nucleic acid according to claim 5.

7. Cell containing a nucleic acid according to claim 5 and/or a vector according to claim 6.

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8. Plant or plant part comprising a host cell according to claim 7.

9. A method for producing 11-perhydroxy arachidonic acid or the reduced 11-hydroxy derivative, comprising the step of

- converting arachidonic acid with a lipoxygenase according to claim 6 and, optionally, reducing the perhydroxy compound obtained to hydroxy compound.

- 5 10. Use of a lipoxygenase according to claim 4 for producing 11-perhydroxy arachidonic acid and/or 11-hydroxy arachidonic acid.
11. Arachidonic acid derivative containing a hydroxy group at position 11.

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